The Boston Medical and Surgical Journal

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December 19, 1918

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## Original Articles.

# THE SCOPE AND AIM OF MENTAL HYGIENE.[*]

By William H. Burnham, Clark University, Worcester, Mass.

*President of the Massachusetts Society for Mental Hygiene.*

Mental hygiene is no longer concerned merely with the care and prevention of feeble-mindedness and insanity; and, while in the minds of some it may still be associated with certain fads and vagaries, it now rests on a solid foundation of scientific fact, and has already made important contribution to the mental health of normal children and adults. Recent studies, however, have greatly increased the scope and significance of the subject. The best way to show this is by briefly enumerating some of these investigations.

1. The war has greatly increased the scope of mental hygiene. And, on the other hand, mental hygiene has made a contribution of vast importance and unprecedented character to the war, in its examination of officers and men for the detection of nervous and mental disorder, in the reëducation of disabled soldiers, and in its aid to the morale of the army. This last is distinctly the aim of mental hygiene; for the conditions of morale and of mental health are practically the same. This morale depends upon training. War is a crucial test of a nation's education; and the behavior of soldiers reflects the character of their training.

Again, the effect of the war upon children suggests the need of sound mental hygiene. Investigations indicate that children in the war zone are largely protected from fear and worry by their natural attention to the present and the concrete details of any situation, however terrible, but in prolonged wars the strain has its effect. One of the saddest reports of the Thirty Years War was that the children were no longer seen playing in the streets of the German cities; and in some localities in the present war it has been said that the children have forgotten how to smile.

Especially important for mental hygiene is the lesson of the war in regard to nervous disorders. Shell shock and similar neuroses develop, not as the result of severe wounds and grave lesions of the brain, but rather in the psychic field on the basis of congenital tendencies, special sensitiveness to stimulation, or the like, and after a period of great strain, fatigue and sleeplessness.

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[*] The special aims and purposes of the Massachusetts Society for Mental Hygiene have been presented in Publication No. 1 of the Society.

These cases are instructive because they show in large letters what may occur in any individual subjected to sufficient strain. Mr. G. Elliott Smith has well stated the relation of the war neuroses to the disorders found in times of peace as follows:

"The incipient forms of mental disturbance which the anxieties and worries of warfare are causing ought to impress upon the attention of everyone that such causes are also operating both in war and peace, and are responsible for a very large proportion of the cases of insanity, and it is precisely these cases which, if diagnosed in the early stages and treated properly, can be cured. The chief hope of reducing the number of patients in asylums for the insane lies in the recognition of this fact, and acting upon it in the way of providing institutions where such incipient cases of mental disturbance can be treated rationally, and so saved from the fate of being sent into an asylum."

In order to apply the principles of mental hygiene and to give that mental training that may preserve an individual from nervous disorder and insanity a great amount of time is necessary. It would seem almost impossible to supply the necessary institutions for this purpose. It is a question whether it would be desirable to do so. Apparently the only institution where there is time for proper training of this sort is the public school, and here is where the principles of mental hygiene should be applied and instruction and training adapted to those individuals who are oversensitive to stimulation and liable to become victims of nervous disorder. This can be done, because the form of treatment required is precisely in harmony with the training that is given in the best schools. What is necessary is that teachers should be given adequate preparation for such work and that time and attention should be devoted to the detection and care of such children.

With proper training of these children in the public schools the question would soon arise why must a child be defective in order to have the benefit of mental hygiene and the demand be made that all children share in such training and that the principles of mental hygiene be followed in all the methods and discipline of the school, and that all teachers have a knowledge of this subject and be prepared to follow the well-recognized principles of mental hygiene in all their work.

2. Physiological studies, both before and during the war, have placed mental hygiene upon a solid scientific basis. What occurs in the brain when the mind thinks, was the problem attacked long ago by the great Italian physiologist, Mosso. And a long series of investigations since have shown definite physiological changes correlated with mental work, changes in the distribution of the blood, an increased liberation of heat and increased metabolism. The simplest test of these changes is the increased pulse rate that accompanies attention.

Among the most important of the physiological investigations are the studies of the glands with internal secretion, the thyroid, the thymus, the pituitary, etc. Although the function of these glands was not discovered until recent years a vast literature on the subject has been produced. Biedl in the second edition of his handbook, although omitting the less important of the older literature, presented a bibliography of 250 large pages. And since that time an enormous number of books and articles have appeared.

These modern studies, especially those by Cannon and Crile, have shown not only that normal growth and development depend upon the proper functioning of these glands, and that certain forms of feeblemindedness, cretinism, myxoedema, and the like, are caused by defect in one or more of them, but that their normal functioning is significant for our life of feeling and action.

The fascinating story of the relation of the adrenal glands, for example, to the different emotions and to worry and anxiety, suggests in definite scientific terms the far-reaching significance of normal mental states for normal metabolism and normal activity of the whole physical organism.

If we can trust the studies of Crile, the physical effects upon the nerves from long-continued worry and emotional strain is precisely the same as that brought about by drugs and the toxins of infectious disease; and, on the other hand, just as the injurious effects from the overstrain of the so-called kinetic drive can be remedied in some cases by a suitable operation removing a portion of the overactive gland, or by the use of morphine, in like manner the same effect can be brought about in some cases by removing the worry, and by sleep and rest, if this be possible.

The results of these studies of the glands with internal secretion are of great significance for practical mental hygiene. Apparently they are not only the vital organs regulating growth, but the physical organs to be specially considered in the hygiene of emotion.

3. Recent studies in psychiatry have also greatly broadened the field of mental hygiene. They have shown the possibility of preventing many forms of mental disorder; especially cases on the borderline between the normal and the defective, cases of the manic-depressive type, the various anxiety neuroses and fatigue psychoses, and even some cases of dementia praecox, where suitable environment and suitable training can be provided. They have shown that in many cases the best means of cure is some form of reëducation involving the development of wholesome interests and regular habits of attention and orderly association. This method, so helpful for cure, appears even more significant as a means of prevention; and thus is opened a wide field for the work of mental hygiene, especially among children and youths. It is a grave reflection upon the schools that so many of their graduates have to be reëducated in the sanitarium or the hospital.

4. Psychology in recent years has made many important contributions to mental hygiene. Among the most noteworthy of these are the results of the Würzburg School in Germany and of Dr. Baird and their other followers in this country. These investigations have shown that deeper than the life of perception and ideas are the mental tendencies, the sets of the mind, the mental attitudes, and the like.

In all education the importance of the mental attitudes is clear. Pupils carry away very little book learning from the schools, as every teacher knows, but the mental attitudes developed are the vitally important things; and these have a double significance, on the one hand for the mental efficiency of the pupils, and on the other, for their mental health. As Dr. Abbot suggests, probably many cases of mental disorder could be prevented by the development of proper attitudes toward life. These attitudes are determined not only in the home, but in the school, by the tasks set for the pupils, by the directions given by the teacher, by the presence and behavior of the other children, and by the whole environment of the pupils.

Many other investigations, especially in experimental psychology, have widened the scope of mental hygiene. Of these I can speak of only one.

5. The most important contribution to mental hygiene, providing a method of unlimited application, is probably the modern study of the conditioned reflex by the Russian school of Pavlov and the adaptation of this to the study of children by Krasnogorski and by Drs. Mateer and Watson in this country.

The difference between an ordinary reflex and the conditioned reflex is easily shown. If I give a dog a piece of meat, at once there is a flow of saliva. That is an ordinary reflex. Pavlov has shown that, if every time one gives the dog meat a bell is rung, after a time the mere ringing of the bell without giving meat will produce the flow of saliva. This is a most remarkable result. An entirely indifferent stimulus, the sound of the bell, has become associated with the biologically adequate stimulus, the meat, and produces the same physiological reaction. The flow of saliva brought about by the mere ringing of the bell is a conditioned reflex, and the sound of the bell is called a conditioned stimulus.

Pavlov has developed an elaborate technique for the study of this subject and has shown that the sensation from any receptor organ—sight, hearing, the dermal senses, etc.,—may be made a conditioned stimulus by repeated association. Krasnogorski in Russia, Dr. Mateer at Clark University, and Dr. Watson at Johns Hopkins have shown that motor conditioned reflexes can be developed in children and that the ability to form such reflexes is correlated with the development of the mind and brain.

All this is of great importance to education and hygiene; for it furnishes an objective method for studying the development of the brain cortex on the one hand and the growth of habit in the individual child on the other hand. All training in animals and children consists largely in the acquisition of conditioned reflexes.

Besides the reflexes important for training, a number of unfortunate or pathological reflexes may be produced by the conditions of home and school life. A single illustration may be cited from Dr. Habermann. "A child is late for school, rushes through its breakfast, feels extreme anxiety as to the outcome (scolding, humiliation, being kept in, etc.), and finally speeds off to school. After reaching there it vomits. On the following day, although there is no rush nor anxiety, through association of what happened the day previous, it vomits again. The child I have in mind was congenitally neurotic; the quite normal child would probably not have reacted in this way. In fact, we see these pathological association reflexes forming in individuals who are 'sensitive,' or congenitally predisposed."

We know relatively little about the conditioned reflexes developed by our ordinary school and home environment; but the studies made show the vast number of them acquired by a child during the period of school life—groups of habits and associations probably for every subject of study in the curriculum, perhaps for every teacher and companion—and the importance of them for the mental health of the individual.

6. Another class of investigations partly psychological and partly psychiatrical, namely, the studies in psychoanalysis made by Freud and his followers, have contributed much to mental hygiene, by showing the great importance of normal emotional and instinctive life in early childhood, the persisting evil results that may come from any unfortunate emotional shock, even in the days of infancy, and the danger from abnormal domestic relations—undue dependence on father or mother, undue repression by the parents, or the like.

These studies are significant not so much because the psychoanalysts have shown the widely irradiated effects of disturbances of normal emotional life, but because this work furnishes illustration of the great principle that opportunity for normal reaction to emotional or instinctive stimuli should be furnished, and of the pathological effects that may occur when such opportunity is not given.

In spite of somewhat erratic terminology and sometimes fantastic illustrations, Freud has also made important contribution to the general and applied psychology of feeling and association. Just as Pavlov and his school have shown that any sensation whatever from any receiving organ may become associated with an ordinary stimulus and bring about precisely the same physical reaction, so the studies of Freud apparently have shown that in some cases at least, when a normal reaction is blocked, any kind of a reaction, physical or mental, associated with the ordinary reaction, may take its place and function vicariously.

If in case of children normal reaction is blocked by an effort of the will, if a disagreeable thing is put out of mind, then, according to the psychoanalysts, it is apt to become associated with something else, either with some idea which is endurable, or with some physical pain or the like which is preferable to facing the disagreeable fact. All sorts of defenses of this kind may occur.

Although not all of them have been advocated by Freud, so far as the writer is aware, the hygienic measures suggested by this are obvious. First, the keeping up of the general mental health, the health level, which enables one to resist strain; second, the transfer by association of the painful or distressing idea with some intense interest or enthusiasm; third, the habit from early childhood of normal reaction and of absolving or removing the mental traumas, or the results of mental shock, as soon as they are produced, a habit, as we may say, of squaring one's moral accounts each day. This training, simple as it is, is of the greatest importance.

These and many other recent investigations in psychology and hygiene have shown the importance of what may be called the mental factor in determining conditions of efficient work and healthful reaction. Even the recent studies of the conditions of the temperature and humidity optimum for mental work reported by the New York Commission on Ventilation indicate that within rather wide limits the mental factor is more significant than the external physical conditions of the atmosphere.

The mental attitudes, interests, and associations are matters definite and tangible, the objective study of which, together with the investigation of the physiological conditions of mental activity, has taken the subject of mental hygiene out of the realm of speculation and fancy and placed it upon a solid foundation of scientific fact. These studies have enormously increased the scope and significance of mental hygiene.

### THE FUNCTION AND AIMS OF MENTAL HYGIENE.

Mental hygiene aims to save society from the burden of feeblemindedness and insanity —a burden the money cost of which is enormous, the results of which in sorrow, misery, and crime are incalculable. It aims, however, not only at the prevention of acute mental disorder, but at the development of wholesome interests and habits of healthful mental activity in all normal children and adults—habits that ensure happiness and efficiency as well as sanity. It aims at nothing less than the development of morale in all classes; it aims to develop that everyday patriotism which is ready to sacrifice personal interest for the welfare of the social group—the family, the community, the church, the state, the world. It aims at all this both for the health of the individual and for the welfare and sanity of the social group. To realize these aims mental hygiene would apply the simple fundamental principles of mental health in the home, the school, and all agencies for education; it would apply the principles of a fearless democracy, especially in education, to give all the opportunity according to their ability to develop the capacity as well as the will for service, and to become superior men in something, according to their talents. Thus, everyday democracy, every-day patriotism, and every-day service, are the natural outcome of mental hygiene.

More concretely, the function of a mental hygiene society is sixfold, namely, to aid as far as possible in the following:

1. The care and prevention of feeblemindedness and mental disorder, the traditional function of such societies, for which they were first organized. This, of course, should be continued.

2. Care for defective delinquents and the large class of other defectives found in every school.

3. Care for the mental health of normal children, a function that cannot be too strongly emphasized.

4. The development of every-day patriotism and every-day democracy, and care for the mental health and morale of our citizens and of the soldiers and sailors in our army and navy.

5. Care for the mental health of all those who, in this present time of stress, are subjected to unusual burdens and anxieties.

6. Care for the wounded and discharged soldiers who are returning from the war with nerve shock and the like.

The importance of each of these is obvious. No one of them can be neglected. Even if for the present some of these cannot be performed, nevertheless, the aim should be to help in all.

If much of all this seems a form of social service in the field of morals, that is not strange; for sound morals and mental hygiene are in large part identical. Morality is by no means indifferent to hygiene; indeed, hygiene is the basis of a sound morality, for it assumes that health will be used for worthy ends.

The social service that can be rendered in the field of mental hygiene is of two kinds, help for individuals and aid to social groups. It is not merely a matter of developing honor, loyalty, self-control, interest in work, and the democratic spirit among individuals, but also a question of mental health, sanity and the democratic spirit in social groups. Irving Fisher recently referred to the great danger of discontent among laboring men when workers return from the soldier's life, and he notes that some economists have come to the conclusion "that the solution of the problem of industrial discontent . . . . will lie along the lines of making the workman genuinely interested in his work." The mental hygiene societies may well coöperate in developing wholesome interests in this great social group.

The period after a great war is the great apportunity for education, especially for the defeated nation. For example, this came to Germany over a hundred years ago when humiliated under Napoleon. At that time the great philosopher, Fichte, told the German people that they must make up in the intellectual world what they had lost in the material world. Fichte's advice was followed, and from that time dates the great educational and scientific development of Germany. From the defeat of France in 1870 dates the renaissance of that nation. From the German victory of that time dates the development in German education of the extreme collectivism that has wrought the ruin of that country.

Nothing better for the welfare of Germany could have happened than a thorough defeat. In her present pathological condition it gives her the opportunity for healthful reëducation. To the allied nations, the most serious crisis since the first battle of the Marne has now come. As Clemenceau has recently said, it will be harder to win peace than to win victory. For America the present represents a period of gravest danger of those extreme and unrelated developments which threaten the health and sanity of the nation. In helping to meet this danger and in aiding educational reform lies the greatest opportunity that has ever existed for mental hygiene.

### THE MASSACHUSETTS SOCIETY.

The National Committee and the various state societies for mental hygiene take a broad view of the subject. From the beginning the Massachusetts Society has attempted "to combat mental disease from the point of view of prevention." Maintaining an office and an executive secretary, it has carried on a campaign of education by providing competent speakers, distributing pamphlets, and imparting information in regard to the data, laws, practices, and literature of mental hygiene.

The importance of a mental hygiene society for the welfare of the community has been sufficiently emphasized, but few realize the amount of money needed for its activities. For example, the Massachusetts Society has issued a little leaflet, "How the Soldier Keeps His Nerve," and has distributed this to training camps for officers all over the country. The cost of publication is about one cent a copy; but to supply this to 2,000,000 soldiers without postage would cost $20,000; to supply only the officers, $3,000 or $4,000.

The Society has also published a leaflet for teachers and parents that costs about a half a cent per copy. To supply this to the 700,000 school teachers in the United States, with one-cent postage, would cost $10,000. To supply it to the teachers in Massachusetts alone would cost about $250. And it would cost much more to distribute widely the larger publications of the Society, important for teachers and the general public, such as Dr. Abbot's *Preventable Forms of Mental Disease;* Dr. Fernald's *What Is Practicable in the Way of Prevention of Mental Defect;* Dr. Putnam's *Mental Preparedness;* Dr. Southard's *The Major Divisions of Mental Hygiene;* and Dr. Stedman's *Mental Pitfalls of Adolescence.*

While the Massachusetts Society, through its speakers and publications, has reached a large audience, the limited funds of the Society do not yet permit wide distribution of its literature and an adequate extension of its influence.

This Society is always ready to help in providing for the feebleminded and the defective; it strives to make the treatment of the insane more intelligent and successful; it wishes to aid in the care of soldiers suffering from war neuroses, and in the reëducation of the disabled and the crippled; but it recognizes that its services must largely be the important work of prevention.

The Society aims to prevent feeblemindedness by segregation and by checking the marriage of the unfit; to prevent the development of insanity where that is possible; to prevent the spread of venereal disease, the use of drugs, and in general the conditions that produce nervous breakdown among children, soldiers, and the general public; to provide for defective and unusual children a training that will enable them to make healthful adjustment to a conventional social environment; to give normal children a training that will ensure happiness, efficiency and mental health; to preserve the morale of our citizens and soldiers, without which victory would have been unattainable, and with which defeat was impossible; and, finally, to give the community the benefit of the truths of mental hygiene at all times.

Prevention is the special task of hygiene. both mental and somatic, but the position of hygiene is a peculiar one. Everybody believes in hygiene, although few like to practise it. In this country we seldom do anything to prevent evil. We are expert in meeting trouble after it comes, but we do not lock the stable door until the horse is gone, and thus the public think little about hygienic matters, although apt to be badly frightened when disease comes. Hence the position of the hygienist is not enviable. He is apt to be looked upon as a crank and a faddist. If he is successful in his work of prevention, nothing happens; the work of hygiene is never spectacular, but largely the slow process of education, and therefore, often handicapped.

Thus, while the greater the success of mental hygiene the less the need for it appears, it has its significant message for every man in the most humdrum life of peace, and for every woman in the monotonous routine of her daily tasks; and in times of stress it has its solace and its aid for every soldier in the trenches, for every Red Cross nurse, for every army helper, of whatever name, of land or sea or air; for every government official, whether struggling with rusty administrative machinery or with red tape, or the victim of unjust blame, or merely overburdened with the stress of normal work; and for every industrial worker, for every woman patiently knitting socks or ingeniously planning wheatless meals for her family, for every father struggling with the financial burden of wages, taxes and loans, for every mother who has sacrificed her son, for every woman who has given her husband or sweetheart.

Such is the scope of mental hygiene. Such is its message. In a time when the danger of mental disorder is more serious, perhaps, than ever before, and the number needing the help of a sound mental hygiene greater than ever before; when we are just emerging from the storm and stress of war; when the hearts of men and women at home are still bearing heavy burdens and the morale of the best soldiers is being tested by a strain more severe than that of war; in a time of numerous fads and cults, when men cry, "Lo here and Lo there, is the kingdom of health," mental hygiene preaches its quiet gospel based upon scientific fact and offers the aid of our vastly increased knowledge to those in need of sympathy and aid, a gospel as significant in peace as in war, as important for children as for adults, as helpful for normal children as for the defective.

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## MUNICIPAL CONTROL OF DIPHTHERIA.

By D. M. Lewis, M.D., New Haven, Conn.

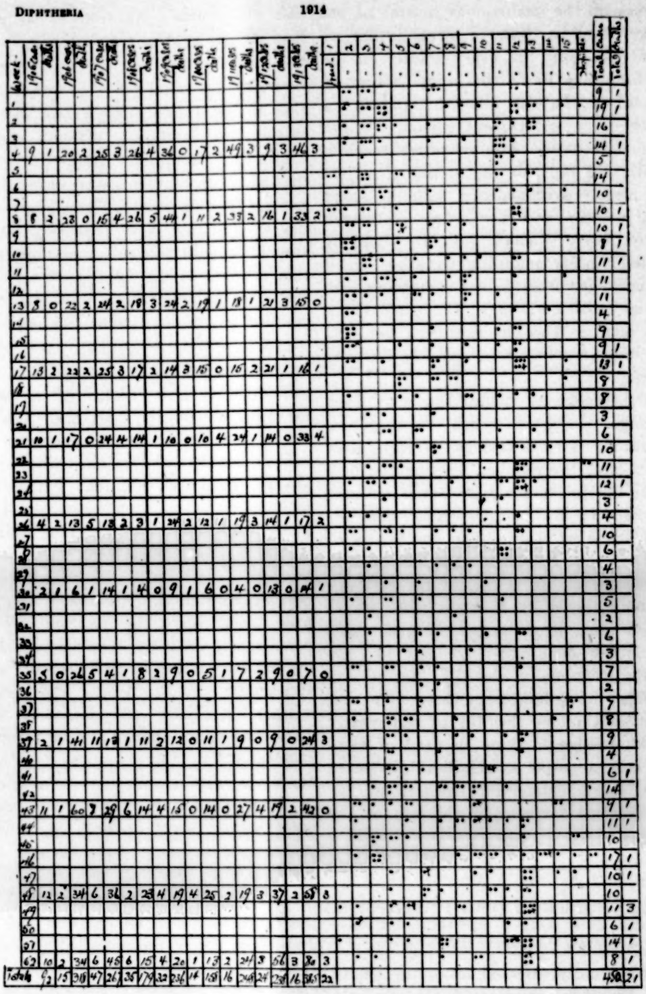
To the community, as well as to the health authorities, the motto taken from Pasteur, "It is within the power of man to banish from the world all infectious diseases," is of life-saving interest from the standpoint of diphtheria. To create any standard for the control of a disease, that method which results in the most positive prevention as contrasted with all other methods should have the basic consideration. With the majority of known infectious diseases there are two factors for prevention when the etiology and the method of spread of the disease are known. An illustration in terms of that disease where today the greatest strides in prevention have been made, namely, typhoid fever, is illustrated either by prevention as carried out by Japan in their late war by carrier search and sanitation without emergency or continued vaccination against the disease, or that of other countries who have relied on the latter factor primarily. Extended to communities we find that New York City has made an enviable record for two years by primary action devoted to the finding of carriers among food and milk handlers, with advocating vaccination as the emergency prevention.

If we apply what methods have been brought forward regarding the control of diphtheria, we find that New York City stands sponsor for immunization against the disease as not only preventive, but as emergency treatment as well, based on the demonstration of susceptibles by the Schick reaction. Under the age of 18 months all children should be immunized, as the majority of children lose their maternal immunity after the sixth or ninth month; over the age of 18 months the Schick reaction becomes the criterion. It is stated also that those who do not give the reaction *are probably permanently immune.* The manner of reaching the children is through the homes, institutions and public schools. Adults who come in close contact, especially attendants in contagious disease hospitals, should also be reached. It is also stated that *"the immunity developing from the toxin-antitoxin is slow in appearing, and is, therefore, not a reliable safeguard in hospital wards where children are crowded together and suffering from various contagious diseases."*

As limitations under this method, we have the ability to reach all children and any children only under the so-called educational responsibility placed directly on those responsible for the children. Secondly there is yet a wider limitation as applied to adults. Thirdly, and the essential point of true responsibility, as illustrated with typhoid fever, there is an absence of consideration of the scientific basis factor, the carrier.

When one studies the disease from investigations and observations in the field, there may be found a method which presents prevention from the point of view of true prevention, namely, the carrier. Having shown how such

**DIPHTHERIA** 1914



| Week | 1905 cases | deaths | 1906 cases | deaths | 1907 cases | deaths | 1908 cases | deaths | 1909 cases | deaths | 1910 cases | deaths | 1911 cases | deaths | 1912 cases | deaths | 1913 cases | deaths | Total cases | Total deaths |
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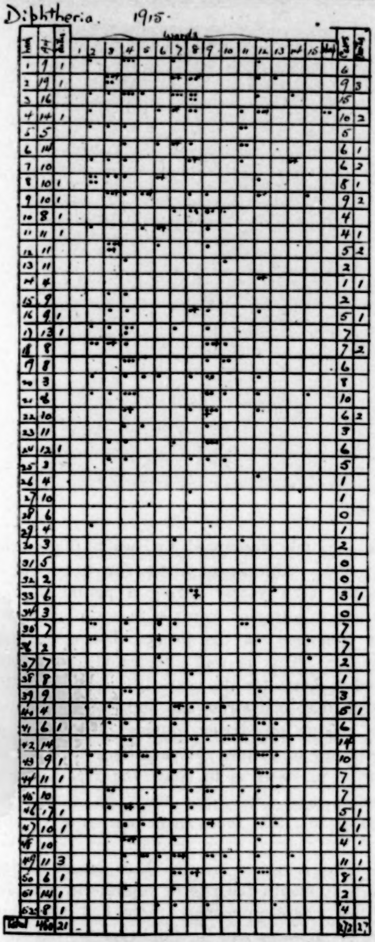
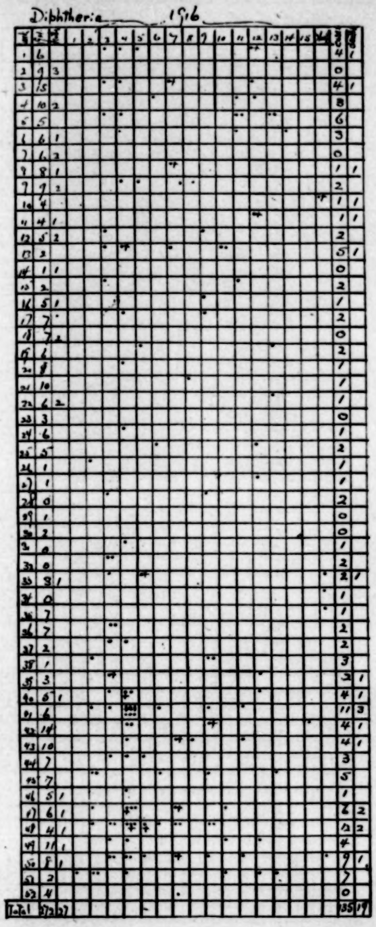
| 51 | | | | | | | | | | | | | | | | | | | 14 | 1 |
| 52 | 10 | 2 | 34 | 6 | 45 | 6 | 15 | 4 | 20 | 1 | 13 | 2 | 24 | 3 | 56 | 3 | 80 | 3 | 8 | 1 |
| Totals | 92 | 15 | 318 | 47 | 267 | 35 | 179 | 32 | 236 | 14 | 158 | 16 | 246 | 24 | 238 | 16 | 365 | 22 | 450 | 21 |

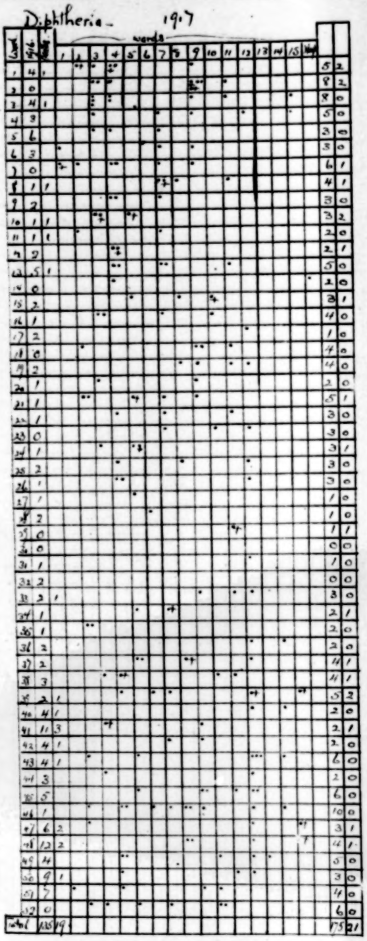
carriers were found,[1] what the factors were in making them such,[2] and the practical application of the previously demonstrated points,[3] we are in a position to contrast this method with the former method.

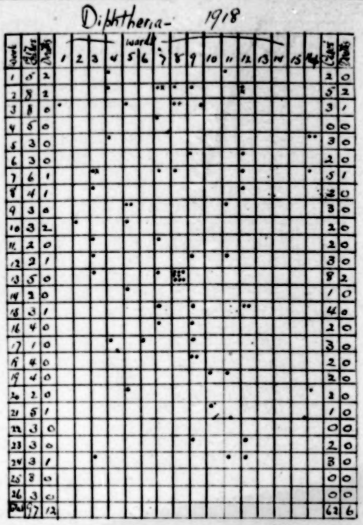
First, there are no limitations on reaching all children, both pre-school and school groups, including those not reached in the former method, children from out of town, temporary **resident for even weeks. Under the system that I have shown[4], the weekly visit of the municipal communicable disease nurse can have an inspection of such. The importance is based on the two facts; first, that they are frequently active carriers, as I have shown; secondly, if of school age, they would otherwise not be found. There is a corresponding wider ability to reach adults who are necessary un-**





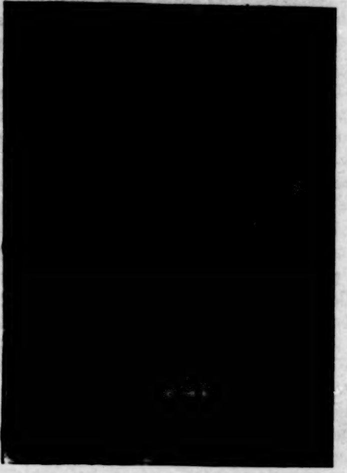
der this system. This is also a measure of the district work of the nurse in ferreting out the communicable disease history of the families in the district. The third limitation of the first method, then, is the basis of our method. As such, a review of the characteristics of the carrier may well be given. Irrespective of whether the carrier is adult or child, whether one who has had the disease previously or not, we present the illustrations, photograph and colored reproduction, as the average picture that we show nurses who are to take up the work as well as those who are similarly responsible in institutions. Whether the presenting bloody-purulent coagulated mass seen protruding from the right nares is externally discoverable, as here shown, or whether a similar picture is seen only between the middle turbinate and the external meatus, necessitating the tilting of the nose, or whether there is exuding seropurulent fluid as well, excoriating or having excoriated with crust formation, the upper lip or even cheeks where finger infection has been transferred to scratches or cuts, I have shown that only what can be seen is the main objective with the corroboration of the culture.



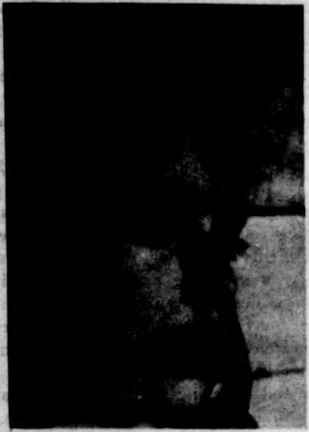


From observations, as I have shown, the activity of the chronic recurring carrier is in terms of recurring head colds and are very definately non-contagious for cases. They are individuals who have had the disease and are the ones generally responsible for further carriers who have not had the disease, but for reason of deformity, generally unilateral, have an ordinary head cold infected directly by such primary carriers. Cases are traceable to the secondary carriers. Their numbers and distribution, whether family, house or neighborhood, are definitely accounted for, when the carrier is found. Absence of cases for a period of months, even years, during a period of frequency in adjacent wards with a similar previous frequency in the former district are obtainable. This is well illustrated in the appended charts for the years 1917-18 in the 13th ward. Especial stress has been laid by me on the making of carriers during the periods of frequency of grippe and measles. Almost conclusive in itself is to chart the frequency of measles and diphtheria week by week; the records of the four principal cities of this State so charted show regularly by years that following a rise of measles there ensues during the next month the rise of diphtheria with fatalities where previously there had been but few or no cases and no fatalities.

What are the advantages of this method as compared to the former? Based on the experience that only what may be seen is to be looked for and that the what to be looked for is the unusual, *if it is accurate,* it should give definite results, gain time for larger amount of work by directing procedures for a small proportion of the children or adults, the main gain being in that concerned from cultures, and not require the basis of the former method, active immunization or a procedure for detecting susceptibility. The sum total expressed in terms of responsibility directly assumed by the



Nasal Carrier of Diphtheria.



Nasal Carrier of Diphtheria.

health authorities rather than the latter placing responsibility elsewhere is a basic fundamental.

What are the results in terms of our advantages? I have shown that for three years this city has never had a recurrent case except *convalescent nasal carriers were discharged by the hospital with consecutive negative cultures,* that secondary family cases have been reduced to the minimum of family disregard for the demonstrated carrier which has been from the standpoint of the attending physician as well, that secondary neighborhood cases have been reduced and, a point appreciated in this city, that during one and one-half years past no house of the better residential section, with but one exception, has had a case of the disease. This exception was related as Case 3 in my "Study of Diphtheria Carriers." If now it is realized that this work characterized the investigation of and prevention of the disease in institutions as well, namely, the Gaylord Farm Sanatorium, and the Orphan Asylum of this city and was done without the dependence on the Schick reaction, active immunization or prophylactic antitoxin under any circumstances during these years, such results as obtain are the more valuable. The definite assurance of absence of secondary or recurrent cases gained from the first two years' work on the carrier was the warrant for not only not taking up these procedures, but of personally advising against them as time consuming, frequently impossible for complete use of, but especially as misdirecting responsible attention from the basic cause.

Results are definitely those expressed in deaths per 100,000 population when consideration is taken of the factors that cause the similar frequence of the disease; namely, cities must be compared which have similar climatic conditions, a mixed population and immediately preceding or prevailing respiratory disease frequence. Bridgeport, this State, had, like New Haven, a high frequency of measles in 1917, in terms of deaths 12.5 contrasted with New Haven, 13.5 per 100,000. The diphtheria rate, respectively, was 20 and 16. As stated in my "Study of Diphtheria Carriers," the early fall incidence of reported diphtheria was higher than the previous year and was exactly following the ward incidence of previous measles. The measure of two nurses inspecting all children in school and a small proportion in selected districts during December, 1917, and January, 1918, gave the following rates: Bridgeport, for the first quarter 1918, 14; New Haven, 9; for the first half year, 1918, the former city, 16; ours, 4. Extending this to New York the year rate for 1917 was 20 per 100,000, 11 for the first quarter of 1918 and 12 for the first half year of 1918. The rise is coincident with the rise in measles during 1918. Similar figures may be shown also from such as: Boston, 1916, measles, 14.1; diphtheria, 24.3; and 1917 giving 13.1 and 35.7 respectively. Interesting similar higher rates but corresponding are given by Winslow for cities in Russia.[5] Further testimony may be shown by the not infrequent number of weeks when there were no reported cases for New Haven during the winter season while the public health reports showed that our neighbors were reporting continued proportional increases. It has been current opinion, in some quarters, that this city was getting away from reporting of diphtheria deaths (even to labelling as well) as grippe, for the reason that the laboratory was doing extensive work on the differentiating of pure streptococcal infections simulating diphtheria and carrying the diagnosis into field work and education. That this had no bearing on the question at issue is shown by the same comparative statistical deaths of the various cities compared, that this city had continued monthly disproportionate lessened total deaths from all communicable diseases as well as those from grippe or streptococcal diagnoses in each and all ages. In itself this was a measure of the finding of such streptococcal carriers.

How trustworthy is nasal inspection only, is a very proper question. So trustworthy that it may be left to institutional nurses after an initial demonstration; that after a similar initial complete school demonstration during the five ensuing months there were but two carriers who got by teachers and caused a single reported found case before the carrier was located. One was the illustration offered, responsibility for which lay with a substitute teacher; one a carrier in a school which did not class themselves as under our jurisdiction. In this connection the reliability of the school absentee card system used by me is shown by the record of the 13 weeks in 1918 for the 8th ward. A substitute teacher failed to return the only absentee not reported in that school for the half year. One week after the day on which we should have had the card for investigation, the absentee and two other children in the family were sent to the hospital by a physician, on his initial call, as diphtheria. The absentee and a brother, a cripple from active bone tuberculosis, were both dead in the ensuing 24 hours, and three other children in the family were sent a few days later as cases, although inspection of them had shown them to be neither carriers nor cases.

The appended charts show the incidence of reported and found cases by weeks and by wards for the years I have been working on the disease with, for comparison, that for months for the previous nine years. Deaths are shown by crosses. With measles epidemic in 1917, causing the greatest number of deaths since a similar epidemic in 1906, what follows as well during and after a small frequence in 1914 is well shown by the charts. The greatest number of deaths from diphtheria follow in the first half year during those years immediately following a high measles. The greatest number of deaths during the last half year is during a measles year, or one of grippe, which gives a lesser preponderance. Results, then, are very apparent, not only for the first half year of 1917 over 1914, but even greater over the first half year of 1918 over the similar period of 1915. Similarly, the last half of 1917 shows results in comparison to the similar period of 1914. If now we state that the results through 1917 were those of carriers as found through our school card system and in connection with reported cases, that measure has given excellent results over other cities having similar conditions, and results over our own city under previous similar conditions. The record of the last month in 1917 and that of the first month of 1918 show what happened when two communicable disease nurses spent all their time systematically seeking carriers, in schools, institutions, and scratching the surface of the pre-school age during the ten days' holidays. Following those two temporary months, one nurse became a permanent appointee. Inasmuch as one nurse could cover little ground systematically or larger areas at random, I picked out the 3rd and 4th wards as the hotbeds of infection as shown by the past records. House by house, street by street, this nurse covered in the following months the half of the 3rd ward where measles had been and whooping cough was preëminent by reason of excess of foreign population, and one-third of the 4th adjacent ward where similar conditions held. Taken in terms of frequency, the records of these two wards in terms of previous years and that relative to the other wards both in terms of 1918 and the latter's record for other years is a very striking demonstration of what results may be gotten by our method.

Practical municipal control of a disease is necessarily further bound up in the question of finances. That system which entails a lower cost during epidemic frequency and especially which from any measure of control prevents epidemic frequency is essential. The record of this city from the opening of its isolation hospital for contagious diseases in amounts expended for city cases of diphtheria is as follows: 1915, 23 cases, $1,229, including one carrier, $458; 1916, 17 cases, $1,262.30, including the carrier mentioned, $718; 1917, 33 cases, $1,965.34, including the same carrier, $736; 1918 (first half year), 12 cases, $715, including the same carrier, $424. This record is consistent with our previous results; from the money saved to the municipality for expenditure of city cases of diphtheria alone we have paid in 1918 for the services of one communicable disease nurse, of whose activities such work is but one part.

In sum, municipal control of a disease in theory means practical control in terms of true prevention; in practice it should be able to demonstrate results in conformity to such and in excess of methods not having such a basis. Our results from the standpoint of true prevention, based solely on the carrier, even in the absence of nine-tenths the pre-school age inspection such as is a part of the method expressed in terms of proof, are the warrant that we have a system demonstrating all factors necessary for the control of diphtheria. That this system is operated by a simplicity, a rapidity of directness and a surety of results on all lines, including financial, as should be consistent with personal municipal responsibility, is further expression that we have true municipal control of the disease.

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# HABIT VERSUS INSTINCT IN EATING.

BY HUGH PAYNE GREELEY, M.D., MADISON, WIS.

THE fact that the recent article by Professor Osborne published in the *Atlantic Monthly* for September entitled "What and How Much Should We Eat?" can pass unchallenged by the practising physicians of the country, indicates to me the great necessity for studying the practical application of the science of nutrition as it has been developed in our great nutrition laboratories.

Having for many years been a student of metabolism in its practical bearing in the treatment of disease, I read the above mentioned article with great interest. Such an eminent authority as Dr. Osborne I would not wish to dispute, but I feel that a fuller discussion of certain statements would be helpful.

Professor Osborne makes this statement: "It has been generally held that overeating, except within narrow bounds, is impossible, for the subject will either grow fat, which, of course, has its limits, or will feel badly and cease to eat in excess until a normal condition is established;" and later, in the article, "Can a man overeat habitually without either growing fat or dyspeptic?;" and again, "If surplus food above that needed for the daily tasks of life can be disposed of by increased rate of metabolism, can such a stimulation of metabolism be frequently endured without sensations of discomfort?"

In the practice of medicine the fat man who from instinct ceases to eat until a normal condition is established does not exist. His instinct must be aided by strong will-power and great self-control and the establishment of a normal condition, seldom, if, ever, takes place from a reconstruction of diet alone. Another class of people certainly can habitually overeat without getting fat or feeling badly, particularly without getting indigestion. It is common knowledge that some people cannot get fat and yet they are without organic cause for leanness. It seems to be a matter of temperament or metabolic rate. It is also common knowledge that these individuals can constantly overeat without sensations of discomfort. Constant overeating may produce one of three things,—obesity, indigestion, or metabolic disaster, such as diabetes. Is it not probable that stimulation of the metabolic rate for years might break down metabolic processes in the same way as running a motor with a wide-open throttle will shorten its life through premature exhaustion? Our experience would certainly corroborate this belief, and explain many cases of diabetes.

In another place Professor Osborne says:

"Waste of food from overeating is doubtless small and quite likely fully compensated for because a large portion of the 'good feeders' are among the most efficient in every community." The efficiency of these individuals shortens their lives in direct ratio to the number of pounds overweight they are. Physically, they are many of them effete. Mentally, many of them, by temperament and habit, show a capacity only second to that of their stomachs, while many more show a mental capacity like that of the Fat Boy in Dickens. It is likewise a common experience for men to reduce their weight and limit their rations to increase their efficiency in every way. Even the "good feeders" who are not overweight, experience this.

"A millionaire could not possibly eat as much in a week as a coal heaver unless he engaged in exercise more severe than would be agreeable." If you tried a stuffing experiment no doubt this would be true. But in real life the millionaire often does eat as much or more, and it is easy for him to do it because of his choice of food. Fat in the form of butter, cream and rich meats, and sugar in rich desserts and cake, will allow the millionaire to "win at a walk" without eating anywhere near the same bulk of food.

The statement that "it is not at all improbable that many delicate people of sedentary habits who eat but little suffer chiefly from a deficient supply of vitamines" is one which the practical clinician would feel inclined to dispute. As the main deficiencies in diet result from too little variety in the food and as the chief interest of many of these delicate people is to obtain variety and tempt their appetites with all sorts of delicacies in and out of season, it seems probable that their physical vigor suffers more because they do not use what little they have. In other words, their temperamental habits are more at fault than absence of vitamines. The value of exercise lies in the exercise itself as much as in anything else. Strength and physical vigor come from exercise and not from food, except indirectly. The indolent and well-fed have often less physical vigor than any other class. It is only by using one's strength that one can increase his strength, and in this light it may be independent of food. If it is true that few people overeat as Dr. Osborne supposes, it is certainly true that fewer people undereat, except from poverty or lack of food.

Professor Osborne says, "There is probably less overeating as measured by accumulations of fat above the normal than is popularly supposed." We have here to determine just what is the normal. Statistics of hundreds of thousands of individuals collected through life insurance examinations give us average weights for individuals of all ages. This average has been considered as the normal, but a close analysis of these tables in connection with later statistics of the duration of life, shows that this average weight is too high from the viewpoint of longevity. After a person is thirty years old it is a positive advantage to be ten or fifteen pounds "underweight," and such individuals, far from being looked upon with suspicion by insurance companies are actually considered better risks than those of the so-called normal weight. These facts come from medico-actuarial experience and the most careful tabulation of statistics and facts brought out by such studies are as scientific and reliable as those applied to man from studies of albino rats.

Again Professor Osborne says: "Successful stockmen make their animals eat all they will, in order to obtain maximum production and profit." I do not pretend to dispute this, but I am told by experienced stock breeders that highly bred stock require the most careful feeding and that feeding to obtain maximum production often ends in disaster to the animal, which stockmen then refer to as being burned out. It seems to me that a clear distinction should be drawn between wild animals and highly domesticated ones. The wild animals, by instinct, eat what is best for them. Domesticated animals, bred for special purposes in an artificial environment with artificially prepared foods, need guidance at the hand of the breeder. Their instincts are not adequate, and why should they be? The same distinction applies to man. Pure races in their natural environment choose wisely and well in their food though their tastes differ widely. Races like the Eskimo and the Japanese live upon adequate, balanced diets. They are living under natural conditions which have not changed for centuries. As soon as a people become "civilized" and when races become mixed and emigrate to countries which supply new climate, new foods and new conditions of living, where new methods of transportation and preparation and storage of foods have changed the whole nature of things, then instinct no longer can be spoken of at all. Habit and taste take its place. When Professor Osborne says that dietary habits which satisfy these promptings of instinct are among the most difficult to change, whereas those that do not satisfy instinct are easily changed, he shows a better acquaintance with the dietary habits of the albino rat than with that of his fellow men. Dietary habits are habits, and I have yet to see any dietary habits easy to break, or any other habit that has existed in an individual or a race for a generation or a century. For nearly two years I worked in Newfoundland among a people who suffered from deficiency diseases and in all that time they did not learn to eat more than one new food.

The changes that have gradually taken place in our dietary over the last one hundred and fifty years are extraordinary. Professor Osborne refers to the lack of vitamines in some of our highly milled flours and warns against them. Our American dietary tastes are more and more running toward these refined foods. Think of the prepared breakfast foods of today that did not exist a generation ago. Think of the changes that have come over our national dietary in one hundred and fifty years. For example, sugar consumption has increased during that time from one-fourth of a pound a year, perhaps, to one-fourth of a pound a day. Patent white flour in 1914 had almost completely replaced the partly bolted flours of two generations ago.

When we speak of instinct as a guide to a national dietary, we should consider the nation and the food supply. The Chinese have lived for thousands of years upon a *natural dietary*. We have lived for hundreds of years upon an ever-changing one and one which is becoming increasingly an artificial one. It is true that the West Indian negroes choose a diet for themselves that is nearly ideal. In the West Indies rickets is almost unknown among the negroes. Transplant these same negroes to New York City and ninety-eight out of one hundred have rickets. Instinct does not help them in their artificial environment. But a large part of our population are transplanted. The working people, from necessity, choose what they can afford to buy. The Italians choose a very low protein diet and are physically efficient. The bankers and millionaires choose a high protein diet and are physically effete. The millionaire has not nearly so safe an instinct as the pig. He has meat or eggs three times a day and fat in excessive quantities. Italian families here get meat once a week, eggs never, cheese and milk only in small quantities, and they eat their bread without butter. It is pretty safe to say that the laborer does not overeat, but the travelling salesman always does.

National dietary studies, unfortunately, do not extend over hundreds and thousands of years, as they should to be of real value to the scientist. The effect of high protein diets on one generation may be small, on one hundred generations very great. The relationship between degenerative diseases,—vascular sclerosis, nephritis, diabetes,—and diet is unknown. I am told that high blood pressure is unknown in Korea. We know that degenerative diseases are increasing in this country, and that they always increase as a people become physically indolent and epicurean. The Chinese coolie, than whom no being performs more physical work, is a "seed-eating oriental." Why do not the English thrive in India? Because they take their insular habits of eating with them, and do not modify their dietary habits to conform with the climate and environment.

In the discussion of the nutrition of man we must carefully distinguish between races living under natural conditions, guided by instinct, and peoples living under more or less modified or artificial conditions and following tradition and habit. We must also take into consideration natural foodstuffs obtained by pure races and artificial, condensed and prepared foods shipped to our very doors and obtainable in ever increasing quantities. Climate and temperament modify the diets of races and individuals. In our country we have extremes of both and races living under the most unnatural conditions, in which from necessity instinct can play little if any rôle in their choice of aliment. Must we not teach the new American his particular dietary needs, both as to what and how much to eat?

## Medical Progress.

### PROGRESS OF OPHTHALMOLOGY.

By Edmund W. Clap, M.D., Boston.

#### GLAUCOMA FROM ABSORPTION OF SENILE CATARACT.

**Gifford** thinks absorption of senile cataract not so rare as commonly supposed. He has seen ten cases of practically complete absorption of the cortex. In three of these useful sight was obtained. In six others glaucoma precluded this result. The author thinks that as everyone would develop a senile cataract if he lived long enough, so also everyone would obtain a spontaneous cure in time. But the frequency with which glaucoma occurs with the absorption of senile cataract has been noted by Mitvalsky and Reuss and Verrey. While these writers conclude that the glaucoma or some inflammatory complications cause the absorption, Gifford believes that it is the other way around. The spontaneous absorption causes an increase of tension either temporary and slight, or one that may lead to blindness. The author has now seven cases whose histories support his views. Where the cortex is absorbed or discharged into the anterior chamber a little at a time it is probable that a transient rise of tension occurs but does not attract attention on account of blindness and lack of pain. A larger quantity of cortex in the anterior chamber seems to excite a decided chemotaxis and when with irido-cyclitic symptoms any of this cortex is seen in the anterior chamber it is natural to take it for inflammatory exudate. Perhaps the evil results following couching may sometimes be due to glaucoma from absorption of cortex rather than to the bouncing about of the lens upon the ciliary processes. When the cortex is once absorbed there is danger of glaucoma from dislocation of the loose nucleus into the anterior chamber. Of course these views demand that a senile cataract should not be allowed to become too hypermature even if the other eye still has good vision.

### EYE SYMPTOMS IN ACUTE INFECTIVE JAUNDICE.

Weil's disease was shown to be a pathological entity when, in 1914, a spirochaete allied morphologically to that of syphilis was described by several Japanese observers. They proposed to call it spirochaetosis ictero-hemorrhagica. It has appeared in epidemic forms in the armies of both sides. Weekers and Firket in *Arch. d'Ophthal* and Moret in *Arch. Méd. Belges* give detailed clinical descriptions and from the translation in the *British Ophthalmic Journal* the following summary of the ocular signs is taken: Ocular hyperemia was noted in 46 out of 50 cases and appeared within the first few days. It varied from a slight redness to intense congestion with photophobia and lacrymation and redness of lids, but seldom any conjunctival secretion. It abates after several days but rarely disappears entirely until convalescence is established. Congestion of iris occurs and bilateral miosis and in some cases (9 out of 50) iritis and irido-cyclitis. Mild cases may escape notice but extensive synechiae may form. Atropine usually dilates the pupil fully and then exudate will be seen on the anterior capsule of the lens. These congestive signs are probably due to the local development of the parasite in the uveal tract. Two cases showed optic neuritis but no contraction of fields or central scotoma or diminution of visual acuity. One case had transient failure of sight with central scotoma without ophthalmoscopic changes. One case of acute herpes occurred involving cornea and conjunctiva as well as lids. Conjunctival jaundice was, of course, usual and of no especial significance. Three patients had subconjunctival hemorrhages. Moret believes the vaso-dilation is not of inflammatory origin but is due to disturbances of the angio-tonic function of the suprarenal bodies and the mild neuro-retinitis without functional disturbances he thinks is similar to that seen in other forms of anemia. Van Schevensteen reports retino-chorioiditis as a complication. Hertel (*Arch. f. Ophthal.*) from the German side finds the same ocular lesions and also reports one case of panophthalmitis. He made injection experiments on rabbits and marmots, finding spirochetes in the tissues of the eye always after intra-ocular injections in marmots and often after intra-peritoneal. Those in the conjunctiva might, he thinks, be a cause of new infections.

### ETIOLOGY OF ECZEMATOUS CONJUNCTIVITIS.

Cridland has an excellent article on eczematous kerato-conjunctivitis in which recent views on the etiology are discussed. We quote him as follows: Much has been done to show the close relationship of this disease with tuberculosis. The phlyctenule is itself not a tuberculosis for no tubercle bacilli, alive or dead, have ever been found in one, in fact, no micro-organisms are found though looked for by many observers. There is, however, much evidence that a tuberculous focus exists somewhere in the body in many cases. In many patients Nies and Paton found the opsonic index was lowered for tubercle and rose as the lesion improved, from which they concluded that the phlyctenules were caused by attenuated or dead tubercle bacilli. Stephenson found that in one series of cases 50% showed clinical signs of medical or surgical tuberculosis, while 75% gave a family history of tubercle and in another series of 669 cases tubercle was present in nearly 40%. Several other observers have found similar results. In 1912 Belenky Raskin tried von Pirquet's and Moro's tests on 100 consecutive cases of phlyctenular disease with positive von Pirquet in 90% and the Moro reaction in 85% and eight of the remainder had either tuberculosis or a family history of it. In two cases no such evidence was found. In view of the importance of diet in treatment we must conclude that gastro-intestinal disturbance is a more or less constant factor. Czerny's "exudative diathesis" is caused, he thinks, by an abnormality in the power of fat metabolism. Eczema appears and the child is a prey to infections. This diathesis is not more common in tuberculous families than in others, but is frequently found in nervous families. Overfeeding with milk and eggs or with carbohydrates brings out the symptoms, phlyctenules are common and the status lymphaticus is a most severe form of the condition. Lafon recognizes three groups: (1) Patients already tuberculous when the eye trouble begins. The cause of the eye lesion here is the toxins of the tubercle bacillus. (2) The eye mischief comes on after an infective malady. (3) Patients free from tubercle who appear to be healthy when the phlyctenule came. Morax says phlyctenular disease may be observed in children of the best health in whom all local tubercular infection may be eliminated and to whom we cannot apply the term scrofulous. Lafon thinks these cases, from injudicious feeding, get gastro-intestinal toxins and that the organism in trying to get rid of these provokes the formation of ocular phlyctenules. Of course exogenous causes may be considered, as local external treatment so often suffices and the phlyctenules often appear where external irritation is most likely to be effective. Axenfelt thinks the phlyctenule is the specific reaction of the scrofulous individual to all kinds of infection. Phlyctenules histologically typical may appear in the course of a conjunctivitis due to the pneumococcus, Weeks' bacillus or to the diplobacillus of Morax. The author concludes that we should recognize the existence of an hereditary diathesis which forms a bed rock upon which infection readily takes place. Faulty hygiene, bad and improper food opens the road still further to infection. The widespread tubercle bacilli is the one most successful and perhaps most suitable to such a soil, which then becomes scrofulous, but other infections can by their toxins give rise to phlyctenules. Hird also has a statistical article on tuberculosis as a cause of phlyctenular disease and its treatment with tuberculin, in which he is a firm believer.

### NITRO-PHENOL NEURITIS.

Sollier and Jousset describe neuritic affections in French powder workers under slack hygienic conditions. In three cases extensive neuritis of spinal nerves was present as well as of optic nerves. The characteristics are those of toxic retrobulbar neuritis which may go on to atrophy. This neuritis seems due to nitrophenol bodies in the powders. Prophylactic administration of vasomotor constrictor drugs is suggested. The authors think they can exclude other causes as tobacco, alcohol and tabes and fix on dinitro benzol as the toxic agent.

### IRITIS IN DYSENTERY.

Maxwell and Kiep report six cases of anterior uveitis developing in patients infected with B. dysenteriae (Shiga). In four of them arthritis occurred also. Other causes of iritis were excluded and the authors conclude: (1) A patient suffering from an infection by B. dysenteriae may develop anterior uveitis as a result of the infection, as pointed out by Morax. (2) The ocular affection may or may not be accompanied by articular manifestations. (3) The ocular symptoms would appear to occur most frequently about one month after the first signs of involvement of the bowel, but may occur as early as the twelfth day. (4) The articulo ocular syndrome corresponds exactly to that occurring in another affection of a mucous tract, *viz.*, gonorrhea, as pointed out by Garrod. Maxwell has also reported six cases of metastatic conjunctivitis lasting five or six days in this dysentery.

### ASTIGMATISM.

Jackson has a statistical study of the changes taking place in astigmia. In 1,294 eyes out of 648 patients remeasured after periods of from five to seventeen years, 33% showed less than

.25D of change in the amount of astigmia present and 67% showed at least that much change, while 31% showed .50D or more of change. These latter were more carefully worked out. Astigmia with the rule includes all cases in which the axis of the convex correcting cylinder was placed within 30° of the vertical or the axis of the concave correcting cylinder was placed within 30° of the horizontal. Astigmia against the rule includes those in which the axis of the convex cylinder was within 150° and 30°, or the concave between 60° and 120°. A majority of the cases showed change towards astigmia against the rule, 27% changed towards the rule and 10% remained or became oblique, *viz.*, the axis of the correcting cylinder lay between 30° and 60° on the one hand, or between 120° and 150° on the other. In early life increase of astigmia with the rule predominates but there is a tendency for this to diminish or for astigmia against the rule to increase as life goes on. In cases showing a change of one diopter or more, ophthalmometric measurements showed that in one group the anterior surface of the cornea is an important location of the changes that have altered the astigmia, while in another group the supplementary astigmia is the cause of the change in the total amount. In general the tendency is for astigmia to increase with the rule by increase of the corneal astigmia, and to increase against the rule by inincrease of the supplementary astigmia. Astigmia, though due in some cases to a congenital tendency, develops during life. In some asymmetrical growth of lens is the most logical inference. Jackson concludes that astigmia is likely to change at any period of life and astigmia with the rule becomes astigmia gainst the rule often as the patient grows older. We should adopt a different nomenclature such as, Direct, with the meridian of greatest curvature approximately vertical; Inverse, with the meridian of greatest curvature approximately horizontal and oblique in the same sense as used above in this article. Astigmia is congenital chiefly in the sense that a tendency to asymmetrical refraction exists which works itself out at some stage in the development of the person.

### PSEUDO-NEOPLASTIC INTERSTITIAL KERATITIS.

Stephenson publishes two cases of this kind of interstitial keratitis which he believes may be known to others but which has not been described. The cases have occurred in young subjects presenting some of the ordinary stigmata of hereditary syphilis. Once both corneae were affected at the same time and in other cases one eye has had it after the other. The upper or lower part of the cornea in the position of a Hutchinson's salmon patch has been occupied by a prominent fleshy mass resembling a neoplasm. The adjoining cornea next the central part of the edge of the mass has shown interstitial deposits or in more advanced cases the rest of the cornea has exhibited the appearances of interstitial keratitis of marked severity. In time the fleshy looking mass becomes flush with the surface of the cornea and is not followed by local bulging.

These cases are perhaps more tedious but run much the same course as the ordinary ones. When both corneae are affected the diagnosis is easy, for bilateral tumors are rare; but in one eye the mass may be taken for papilloma, sarcoma or other form of new growth, and this especially when the mass forms the first sign of disease. Age of patient, normal and adjacent conjunctiva, evidences of syphilis, and the course of the disease will settle the diagnosis. Detailed description of two cases is given.

### PARINAUD'S CONJUNCTIVITIS.

Verhoeff, five years ago, reported finding leptothrices in eleven cases of Parinaud's conjunctivitis and he now adds six more cases in each of which the characteristic leptothrices were found in large numbers. The author's report is detailed and important so we quote his description and summary in full. "Leptothricosis conjunctivae is a subacute inflammatory condition of the conjunctiva due to infection with a minute leptothrix and is always associated with inflammatory enlargement of the preauricular or other regional lymph glands. The source of the infection is unknown. In some cases there is a history of slight trauma to the conjunctiva preceding the infection. The incubation period is from three to seven days. The conjunctival lesions consist of focal areas situated immediately beneath the epithelium infiltrated with endothelial phagocytes in various stages of necrosis. These appear as opaque greyish areas from ½mm. to 4mm. in diameter, single or multiple, and may appear in any part of the conjunctiva. They contain the leptothrices in great numbers. More or less granulation tissue is formed causing the conjunctiva to project in the form of polypoid nodules. Ulceration seldom, if ever, occurs. Often the normal conjunctival lymph follicles are greatly enlarged. Congestion and oedema extend through the whole of the lids. Secretion is slight and muco-purulent in character. The cornea is unaffected. Constitutional symptoms are slight or wanting. The affected glands seldom break down. The disease attacks children and young adults; males are affected more frequently than females, and it is usually unilateral. It is more prevalent in winter and is not transmitted from one individual to another. The best treatment is excision of the grey areas and nodules.

### BLUE SCLEROTICS.

The relation between blue sclerotics and fragilitas ossium was reviewed here several years ago, and now new facts have come to light. In addition to a tendency to fractures, dislocations and sprains these patients have been found to have deafness of the oto-sclerotic type. Bronson reports two families. In one 35 members and four generations were examined. There was a tendency (1) to fractures and dislocations, (2) peculiar shape of the head, (3) blue grey sclerotics, (4) deafness, (5) small stature. Twenty-one individuals had the blue sclerotics. The second family in three generations had eight persons, of whom seven had blue sclerotics and tendency to fractures from slight injury and peculiar shape of the head, but no deafness was found in any of these. Van der Hoeve and de Kleijn in fifteen members, of a family of twenty-two, in four generations found eleven cases of blue sclerotics, every one of whom was deaf and ten of them had broken one or more bones. The patients were small, the deafness oto-sclerotic. The ancestors of this pedigree were not relations. These observers report another family with several members showing all these signs. Conlon reëxamined the cases he reported in 1913 and found that all who had blue sclerotics were also deaf and the members of the family with normal sclera had normal hearing.

## Society Reports.

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## AMERICAN ACADEMY OF POLITICAL AND SOCIAL SCIENCE.

CONFERENCE ON THE REHABILITATION OF THE WOUNDED, HELD AT WITHERSPOON HALL, PHILADELPHIA, SEPTEMBER 20-21, 1918, DR. WILMER KRUSEN, DIRECTOR OF DEPARTMENT OF PUBLIC HEALTH AND CHARITIES, PHILADELPHIA, PRESIDING.

### NATURE AND SCOPE OF PROBLEM.

**Dr. W. W. Keen**, Philadelphia: The fundamental difference between the surgical conditions during the Civil War and the present World War is our ignorance in 1861 and the enormous increase in our knowledge since that date. In chemistry and in physics the chief advances in fifty years have been made by experimental research. In biology and its subdivisions of medicine the same is true. The almost virgin fields of battle during the Civil War held few bacteria, hence, while tetanus was not common, it was deadly, killing nine of every ten victims. In the early days of the present World War it exacted a fearful toll of lives, exact figures of which can be given only after the war is over. As soon as there was a sufficient supply of the tetanus antitoxin for the huge numbers of the wounded the ravages of tetanus were checked, and as a result few now die from lockjaw. Every hour of delay, however, in giving the protective serum means a life lost. In the Civil War compound fractures killed two out of every three, amputations averaged over fifty per cent. mortality. Only 25 per cent. of the cases of compound fractures are now fatal instead of 66 per cent., as in the '60's. Our victory over infection is the reason for the greatly diminished number of amputations now done. Moreover, the mortality of amputations at present is low; in some series every one recovered. The present war is waged in densely infected soil, the wounds are caused by high explosives and there is developed an unprecedented riot of infection utterly unknown prior to 1914. If the wounded can be brought to the surgeon in the few golden hours, two out of three can be saved. Out of 400 cases in Carrel's hospital in which primary healing could not be secured because of delay in reaching surgical aid, only six were failures. This is due to the researches of Dakin and the work of Carrel. While engineering and chemistry have done very much to develop modern sanitation, bacteriology has been the most important factor in this movement. In 1861 we were wholly ignorant of the fact that the mosquito alone spreads yellow fever and malaria; of the rôle of the fly in typhoid fever; of that of the flea and rat in bubonic plague, and that the louse was responsible for the deadly typhus and the wholly new disease, trench fever. Typhoid has been banished from our army. Surgeon General Gorgas has given me the following figures: "In the entire army, numbering over 1,500,000 men at the end of December, 1917, there have been during the year 242 admissions to hospitals on account of typhoid fever, with 18 deaths. During the corresponding period in 1861, when the Northern army was being mobilized, there were about 9,500 cases of typhoid fever with less than one-quarter of the strength of the present army, with about 1,800 deaths." In the British army 99 per cent. of the soldiers are vaccinated voluntarily. During the past year there was but one death ascribed to antityphoid vaccination in our more than 1,500,000 men. This would seem to be an overwhelming testimony to the value of the method and that making it compulsory was essential to our winning the war. "The road to the heart is only a little over an inch in a direct line," says Professor F. S. Lee, "but it has taken surgery nearly 2,400 years to travel to it. The heart was first laid bare and sewed up for a stab wound 21 years ago (1897). The operation has now been done hundreds of times and has saved the lives of about half of those operated upon. In the present war missiles have been removed from the interior of the heart and even from the large blood vessels. A striking instance of the value of experimental research compared with observational and clinical research is given in our present knowledge concerning the treatment of syphilis. Since 1903 we have learned more and accomplished more for the human race than in the preceding four centuries of intense clinical study. Ehrlich's discovery of a cure for syphilis is one of the most beneficent ever made. Research will never cease to give us better and better methods of coping with disease and death so long as they afflict the human race.

### RECLAMATION OF THE MAIMED IN THE INDUSTRIES.

**Dr. Harry E. Mock, Lieutenant Colonel, M. C., U. S. A.:** In warfare a number are bound to become disabled, but very few need remain so. A handicap puts more fight in a man and often results in his making good. Michael J. Dowling said, "A man can be worth $100,000 from his neck up, but $1.50 a week from his neck down." Being disabled is only a temporary state; being crippled is a permanent state. A man living in Kansas City confined to bed for four years by paralysis had become the owner and superintendent of a large publishing house. Asked to tell how he accomplished such a result, he said, "I am not an invalid; I am a business man." His advice was to keep the mind alert and active, and to make it work for one. The medical department of the army began at the earliest moment to plan for the reclamation of the soldiers, and it is desired to make closer the coöperation between the medical department and the general public in the reconstruction and rehabilitation of the soldiers and sailors. During the past decade a new specialty has been developed in industrial medicine and surgery. In order to prevent waste, deformity and inefficiency many industries have developed a staff of physicians for men in the first-line trenches of the industrial army, and one-tenth of the workers of the nation are receiving the benefits of this work. Too often men injured in the industries are given positions without consideration of their fitness; if trained they could fill gainful positions. The most unfortunate among the injured and disabled in the industries are those not employed by the firm for which they worked. They must be not only cured, but trained for and given suitable positions affording them an income equal to that received before their disability.

### REHABILITATION OF THE WOUNDED.

**James Phinney Munroe, Vice-Chairman, Federal Board for Vocational Education:** We are today in the midst of the greatest waste and the greatest saving of all history. It is not extravagant to believe that the colossal outpourings of wealth which the orgy of war has forced will possibly be redeemed in one generation by the spirit of saving which, with many other hard and salutary lessons, war has taught. The work of the Federal Government in the rehabilitation of the soldier has its essential complement in the Vocational Rehabilitation Act passed by Congress in June of this year. This Act places upon a Federal Board responsibility for the retraining and placement of injured soldiers and sailors.

Under the Vocational Rehabilitation Act, the Federal Board for Vocational Education, made up, *ex-officiis,* of the Secretaries of Agriculture, Commerce and Labor and the Commissioner of Education, and of three other members appointed by the President, is charged with responsibility for the placing back in economic life and, if need be, for the training of every soldier and sailor so far disabled in military service as to have become a beneficiary under the War Risk Insurance Law. So long as that soldier or sailor needs daily hospital care or so long as he is adjudged fit to return to full or limited military service, he is the sole ward, of course, of the medical military authorities; but from the moment that he is discharged from military service, either because his disabilities are such as to preclude further army service, or because he is relieved from such duty by the coming of peace, he becomes automatically a ward of the Federal Board for Vocational Education, and as such ward, has established rights which he alone and by his own free choice can surrender. Having elected to receive training, the Board, together with the War Risk Insurance Bureau, assumes not only his support and that of his dependents, should he have any, during the process of training, but undertakes to follow him up after placement, and to give him reasonable opportunity for further training should the first venture prove ill-suited to his capacities. The jobs which these men undertake will be theirs because they are fitted to take them. In this placement the Board has the specific right under the law to ask the coöperation of the Department of Labor; it has the general right under the debt which we owe to these disabled men to seek the coöperation of every employer in every line of activity. The Government will fulfil its sacred obligation to make these men as efficient as possible physically; also vocationally in the widest possible field of effective economic service.

### TRAINING OF THE BLIND IN THE REHABILITATION OF SOLDIERS AND SAILORS.

**Lieutenant Colonel James Bordley:** In no phase of reconstruction are there more difficulties to overcome them in the blind. The public has made up its mind that the blind are industrially useless, forgetting the long list of distinguished blind men, statesmen, musicians, poets, warriors, merchants and inventors. A blind man can perform any operation except where judgment must be based on sight. To translate this definition concretely the Surgeon General of the army, working in conjunction with the Surgeon General of the navy, has established in Baltimore, on a beautiful estate tendered the Government for that purpose by Mrs. T. Harrison Barrett, a hospital training school for the blind sailors, soldiers and marines and Congress has endowed the Federal Board for Vocational Education with money and power to supplement whenever necessary that training and to provide the opportunity for employment. The American Red Cross has caused to be organized the Red Cross Institute for the Blind to supply such economic and social supervision as may be found necessary after the discharge of the blind by the various governmental departments. Vocationally we classify our courses as professional, agricultural, commercial, industrial, housework and blind shop work. Only individual study of the men will enable us to help them decide into which of these classes they must go. We hope to hold to the lowest possible proportion the home and blind shop worker. We have a talented and experienced industrial engineer making an analytic industrial survey to determine the occupations suited to the blind. The significance of the work is reflected in the hearty coöperation of every industry studied. If the blind man fails to make good we shall relieve the employer of all embarrassment by removing the blind man and re-educating him for another trade.

### THE RÔLE OF THE AMERICAN RED CROSS IN THE NATIONAL PROGRAM FOR THE REHABILITATION OF THE WOUNDED.

**Curtis B. Lukeman,** Assistant to the Director General of the Civilian Relief, American Red Cross: Here, as in all its work, the Red Cross will subordinate itself to Government leadership and bend all its enthusiasm and resources to the promotion of the official plans and to the filling of such supplemental needs as may arise. The Red Cross has assumed an obligation of military service reaching to every soldier and sailor and to his dependents whenever they indicate a need that the Red Cross can fill. This service continues through that indeterminate but critical interval when the man is awaiting the application of the Government's plan to his individual needs. Such endeavor naturally falls to the Department of Civilian Relief of the Red Cross as a phase of home service work and organization. Home service offers the channel through which patriotism and neighborliness combine to assist and protect the dependent wives, children, mothers and other relatives of soldiers and sailors. A classic of the growing home service literature is a brief letter of thanks from a boy whose mother and sister had been visited and helped in some simple way: "I want to thank you all for what you have done; I can soldier better now." Thus the Red Cross has already in operation a special piece of war service machinery peculiarly adapted to assist in the after care of the disabled soldier. Under the Department of Military Relief of the Red Cross there has been conducted also the pioneering research and educational work of the Red Cross Institute for Crippled and Disabled Men in New York, and the more recently established Red Cross Institute for the Blind supplementing the work of the Army Hospital at Baltimore. The home service organization is assisting the military, medical authorities in obtaining essential data as to the previous history of the blind men, in explaining the Government's plan to the family, and selecting the relative who will be taken to Baltimore by the Red Cross Institute and trained side by side with the blinded soldier.

### RECONSTRUCTION AND REHABILITATION OF THE RETURNING SOLDIER.

**Frederick C. Howe**, Commissioner of Immigration at the Port of New York: The problem of reconstruction and the redistribution of millions of men and women in immediate profitable employment on the termination of the war is as colossal a problem as the mobilization of the army. The United States Employment Service is a proper agency for carrying through the work of demobilization. All of the warring countries are emphasizing the necessity of returning the soldier to the land. And in England, Australia and Canada the farm colony is being developed. Experts have submitted that the soldier will not take up an unbroken piece of land isolated from his fellows. Official commissions in England and Australia are developing plans by which the State will sell to the returning soldiers ready-made farms of from three to thirty acres which one man can cultivate. Farms are grouped as a community with educational, recreational and coöperative agencies for marketing and buying. Men are sold farms with a house, barn and sufficient capital on easy terms, the State advancing nine-tenths of the capital, to be repaid on long-term installments. The experience of Australia and Denmark demonstrates the success of this plan. In the United States such colonies should be located in New England, the Southern, Central and Western States, each adjusted to a special kind of farming. Tractors and farm machinery should be owned in common. Such a program involves no permanent burden to the nation. Such comprehensive agricultural program is demanded by the drift of population to the cities, the growth of tenancy, and the exhaustion of the soil.

### OPPORTUNITIES FOR EMPLOYMENT.

**Gertrude R. Stein**, Employment Secretary, Red Cross Institute for Crippled and Disabled Men, New York: The inception of the United States Employment Service has made us all ponder on what an ideal public bureau should be. Employment work needs the help of all the brains in the country at the present moment. In initiating an employment bureau for the handicapped we have the advantage of having the bureau a small one. No organization of this kind is truly valuable unless it is flexible. Employment work does not mean the mere securing of positions, but the securing of the chance to make a livelihood at congenial work with the opportunity to make use of the best powers of the man. In New York we have an effective clearing house which is invaluable in widening the opportunities open to crippled men. A placement bureau for the handicapped must be more efficient than the average bureau or it will not live; it must have a file of satisfied employers who can be called upon when the applicant seems suited for their particular job. It should be capable of securing a position for a teacher as well as for an elevator man, for a draughtsman as well as for a lathe hand. An industrial survey of the opportunities for cripples in the city must be carried on in conjunction with the employment work. The whole system of placement is valueless unless it is properly followed up. Follow-up work in the factories should be discouraged; it is much better to advise the man and have him settle his industrial difficulties himself. By keeping systematic and full records together with a follow-up system a mass of valuable industrial facts is secured by one of the most economical and effective methods.

**T. B. Kinder**, Vocational Secretary, Invalided Soldiers' Commission of Canada, now on duty with the Vocational Educational Rehabilitation Division of Washington: The United States goes farther than any other country in its care of its fighting men in that it provides that any man entitled to compensation as a result of his injuries may be provided after his discharge from service with a course of training at the expense of the Government. It is our practice in Canada to study every case individually in the light of every factor with a possible bearing. This plan has been adopted also by the Federal Board at Washington in dealing with American soldiers. One of the most important factors in this connection is the man's educational history. His industrial history is also of great importance. The disabled man must have the will to succeed with his reëducation and successful placement. The man elects his course, but he must be assisted to select wisely and in the light of all the information with which his vocational advisers can provide him. A careful medical examination is made to determine the man's abilities, and medical and technical experts are consulted. In Canada 1,347 men have completed courses of reëducation for new occupations; 1,868 are at present taking courses. Over 2,000 men are taking courses during convalescence. Many of the men receiving active treatment in bed are being trained vocationally. The large majority of men completing courses are in positions as good as were held before their service and many are vastly better off. They are self-supporting, capable members of the community, fulfilling their duties in peace as they did in war. This is one of the big things we are learning from the war, the lesson from which will be carried over into the industrial life. There is now before Congress a bill to provide for vocational rehabilitation for the injured in the industries and their return to employment. Of the men returned to Canada unfit for further military service only about ten per cent. required reëducation for other occupations. An interesting fact also is that, up to June 1 last, out of nearly 30,000 disabled men returned to Canada less than 1,500 has suffered a major amputation. The Commission has proved the value of the occupation for mind and body of the men. It is disciplinary both for the disabled man himself in that it prevents that moral and social deterioration, always the result of prolonged idleness and in the institution itself.

**Lew R. Palmer**, Acting Commissioner of the State Department of Labor and Industry: Fifty thousand jobs are open and waiting in Pennsylvania for disabled soldiers returning from France. Industrial accidents in this State in two and a half years, ending July 1, have crippled more men than were crippled in the Canadian Army in four years of war. Pennsylvania was the first state in the Union to take steps toward providing employment for the blind and the crippled after the war. Seven months before Congress adopted the rehabilitation act Pennsylvania, through the Department of Labor and Industry, submitted questionnaires to 900 industrial plants to ascertain in what capacity each plant could employ the disabled war veterans. Forty-seven thousand of the 50,000 jobs awaiting the crippled heroes are in industrial work; 900 are clerical; 16 are in agricultural lines, and 1,200 are miscellaneous. The number of amputations due to industrial accidents in the State was 3,798 in two and a half years, while in the four years of war Canada's army had only 1,200 amputations. Eleven hundred and fifty-seven eyes were lost as the result of industrial accidents in the State, while up to last spring only 34 Canadian soldiers had been blinded.

### THE EMPLOYMENT OF DISABLED SERVICE MEN.

**Frederick W. Keough**, National Association of Manufacturers: In putting disabled men back into industry there is no room for the spectacular. Our soldiers will go the limit in their military life, and we will go the limit in appreciation and care of the injured. Bringing the physically unfit and disabled men to an irreducible minimum is a national obligation. If disabilities make it inadvisable for a man to follow his former occupation he should be fitted for a new occupation by appropriate training. In the clerical fields are undoubtedly the greatest number of openings. In France blind soldiers have been trained to take dictation on a special machine and to transcribe their notes rapidly and accurately. Among the industries opened to disabled men are the plate glass, machinery building, boiler-making, printing. In the underwear industry many firms have offered to take disabled men, one firm even offering to employ them up to one-sixth of the operating force. For men who have suffered the loss of their arms, the chemical industry is particularly inviting. The large number of processes which require little manual labor but careful watching make it possible to employ men lacking both arms. One chemical firm in Maryland has offered to take fifteen such men and train them to watch processes. An Ohio chemical firm has made a similar offer. An electrical manufacturer in the United States has discovered that blind men can be employed with great success in winding armatures. Many and varied industrial opportunities have been offered, proving that no industry is entirely closed to these workers. It has been the experience of firms already employing disabled men that they are so keenly appreciative of the opportunity offered that their spirit of willingness more than makes up for their disability. The matter, however, has been most aptly summed up by a New England firm, which says that the crippled workers in its employ are so satisfactory that the writer has often wished he had more such employes.

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## American Medical Biography.

### MUSSER, JOHN HERR (1856-1912).*

John H. Musser, eminent clinician, teacher and writer, was born at Strasburg, Lancaster County, Pennsylvania, the twenty-second of June, 1856. He was the son of Dr. Benjamin Musser, the son of Dr. Martin Musser, the son of Dr. Benjamin Musser; his mother was Naomi Musser; thus his forebears back to his great-grandfather were physicians, as was a son, John H., who followed him.

He was educated at the Millersville State Normal School, and the University of Pennsylvania Medical School, where he graduated in 1877. He married Agnes Harper in 1880, by whom he had five children, the three oldest surviving.

He was a resident of the Philadelphia Hospital (Blockley), and then a successful quizmaster and bedside investigator; he soon acquired all the traditions of the older school, as typified in the then professor of medicine, Alfred Stillé. He was first assistant professor of clinical medicine in the University of Pennsylvania 1889-98; professor of clinical medicine, 1898-1912. He was the director of the department of research in medicine in the University of Pennsylvania, and in 1911 refused the didactic chair of medicine, as his greatest ambition ever lay in clinical lines, and a large consulting practice left no time for the pressing duties of the chair.

He inaugurated and remained the directing head of the Social Service Department of the University of Pennsylvania Hospital.

Musser had both unusual opportunities and a rare gift for making friends, and was constantly active as a member of numerous medical societies, especially in the College of Physicians of Philadelphia, in the Association of American Physicians, and in the American Medical Association, of which he was president in 1903.

He was the author of "Medical Diagnosis" (five editions), of "Practical Treatment," and editor of "Diseases of the Lungs and Pleura" in Nothnagel's Practice, Vol. IV, as well as of a System of Therapeutics with A. O. J. Kelly.

His early and steady progress in diagnostic skill was manifestly due in large measure to his zeal for autopsies in his Blockley days and later. He was pathologist to the Presbyterian Hospital, and a president of the Philadelphia Pathological Society. His clinical work was done at Blockley Hospital, at the Hospital of the University of Pennsylvania, and at the Presbyterian Hospital.

Musser is a fair illustration of the possibilities which lie within the grasp of the average life of a man of good mentality who consistently and persistently turns his energies in one specific direction and says, "This one thing I do, and I am determined to do it well." He thus became by successive degrees a leading consultant in a great metropolis, a well-read scientific physician, an acceptable teacher, and a pathologist to a grade rarely found in the ranks of our general practitioners.

His sterling character and his rare qualities as a friend cannot be portrayed in a brief biography.

Troubled for some years with a weak heart, he died and was cremated after a brief acute illness, the third of April, 1912.

Howard A. Kelly, M.D.

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* From the forthcoming "American Medical Biography" by Dr. Howard A. Kelly and Dr. Walter L. Burrage. Any important additions or corrections will be welcomed by the authors.

THE BOSTON
Medical and Surgical Journal

*Established in 1828*

An independently owned Journal of Medicine and Surgery published weekly under the direction of the Editors and an Advisory Committee, by the BOSTON MEDICAL AND SURGICAL JOURNAL SOCIETY, INC.

THURSDAY, DECEMBER 19, 1918

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## INFLUENZA AT CAMP BROOKS.

THE full report of the treatment of influenza at Camp William A. Brooks has now been published by the Commonwealth.

On Sept. 9, 1918, when five nurses and four Red Cross aids responded to the call of the Massachusetts State Guard to care for the sailors of the Merchant Marine, stricken with "Spanish" influenza, patients were already occupying the hastily raised tents on Corey Hill. To meet the necessity of medical treatment for the sick sailors in training on the receiving ships *Meade*, *Cobb*, *Dingley*, and *Austin*, the State Adjutant General authorized the Massachusetts State Guard to set up a military hospital on Corey Hill, Brookline, and, under the supervision of Quartermaster General William B. Emery, assisted by Captains Hyde and Lapham, the work was started. To His Excellency Governor McCall and his Councillors is attributed a large part of the initial success of this venture. Under military authority, supplies and equipment were made ready, and thirty-eight patients had been carried to the hospital by the State Guard Ambulance Corps under Lieutenant Joshua Holden, less than seven hours after the work was begun.

The plan of organization adopted by Major Thomas F. Harrington, medical officer in charge, has been satisfactorily followed in other States, and as members of "The Brooks Teaching Units," these doctors, nurses, and aids have established military hospitals in eight other cities in our Commonwealth. The strict adherence of the members of the hospital personnel to these military orders contributed in very large part to the success of the undertaking. During the six weeks of its activity, the camp received hearty coöperation from the Shipping Board, the Public Safety Committee, from delegates from the Federal Government, and from the Red Cross.

At the first meeting of the Medical Corps, M. S. G., at 8 P.M., Monday, September 9th, Lieut.-Col. William A. Brooks, Acting Chief Surgeon of the State, pointed out that the most serious cases which he had observed among the men on the training ships were those who had suffered from lack of fresh air and sunshine. Many boys taken from parts of the ship where the oxygen was scarce, showed serious effects from impaired breathing and lack of fresh air. Dr. Brooks then explained that his fight against the epidemic was to be first, the prevention of droplet infection to others from those affected with the malady, and second, giving to affected patients the greatest possible amount of nourishment, night and day, and plenty of fresh air, and sunshine when possible. During four days of continuous rain, however, the fresh air treatment was still practised without serious results from exposure. No serum or vaccine was employed at the hospital. The patients ranged in age from young men of seventeen to twenty-four years and the 351 patients treated at the camp from September 9th to October 12th represented the seriously ill among 1200 men infected with the grippe out of a group of more than 5,100 sailors. A total of thirty-six deaths was reported. The length of stay of patients in camp was as follows (September 9 to 30 inclusive):

| Number of Days | Discharged | Died |
|---|---|---|
| Less than twenty-four hours | — | 1 |
| One day | 7 | 4 |
| Two days | 17 | 4 |
| Three days | 30 | 7 |
| Four days | 39 | 3 |
| Five days | 19 | 1 |
| Six days | 20 | 4 |
| Seven days | 21 | 4 |
| Eight days | 16 | 1 |
| Nine days | 12 | 1 |
| Ten days | 4 | 1 |
| Eleven days | 3 | — |
| Twelve days | 2 | 1 |
| Thirteen days | — | — |
| Fourteen days | 1 | 1 |

Average time in camp per patient, 5.05 days.

Average days in camp of fatal cases, 4.3 days.

Nineteen (57.5 per cent.) of the 33 deaths occurred among patients who had not been in the camp four days. One patient died within six hours of admission and four others died within thirty hours of admission.

The day service was composed of ten physicians and the night service of eight. There were two bacteriologists and a head-nurse with two lieutenants and 45 assistants.

The summary of medication at Camp William A. Brooks is divided into four groops: (1) Preventive, (2) General, (3) Special Medication, (4) Relapses. The first precaution under preventive medication, and the most far-reaching in its results, was the order for the wearing, by all physicians, nurses, orderlies, and others coming in contact with patients, of five layers of gauze on a wire mask over nose and mouth while near patients. Gauze to be changed every two hours and masks sterilized before re-use. Not only was this lesson of prevention learned by all who visited the camp, but it was soon a recognized protection in use by physicians, nurses and attendants at all hospitals as well as in private homes. All other usual precautions against infection were carried out as well. Under General Medication the first order was the outdoor treatment and four-hour feeding. This order, together with the first order under group (1) proved most striking in its beneficial result. Special medication was often found necessary for fever, cough, heart, delirium, kidney irritation, meningitis, or pneumonia treatment, frequent sequelae of the epidemic. Many of the relapses proved to be a development of bronchial pneumonia and were treated accordingly.

So far as has been possible to ascertain, the only persons of this whole group of 174 attendants coming in contact with the infected patients who developed influenza or pneumonia were six nurses and two orderlies, and in five of these cases exposure outside of the camp could be traced. Every case of influenza received at the camp was considered a possible case of pneumonia until proved otherwise, and as a result of the successful treatment accorded the patients at Camp William A. Brooks, there has been a general adoption throughout the country of the method of protection against infection by the use of the gauze mask and a nation-wide recognition that in combating influenza-pneumonia fresh air and sunshine in open shacks promise the most effective means for a cure.

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## ORTHOPEDIC CENTRES IN SCOTLAND.

Further interesting reports of the value of orthopedics for the wounded man have come to us from Scotland, where plans for such treatment are carried out in the 1st Scottish General Hospital at Aberdeen and in the Scottish National Red Cross Hospital at Bellahouston. The special hospital block at Old Mills forms the nucleus of the Scottish General Hospital and 500 beds have been set apart for the work. Here under three departments, that of electrotherapy, massage, and plaster work, orthopedics under the supervision and direction of Professor J. Marnoch, is proving its beneficial results.

The electro-therapeutic department, in charge of Major J. R. Levack, R.A.M.C., is equipped with galvanic switchboards, special faradic coils with metronome interruptors, earthenware tubs, and a high frequency apparatus which is in constant use. A great many types of cases are treated here and the methods of treatment include graduated faradic contractions, interrupted and continuous galvanism, ionisation, diathermy, high frequency, and muscle testing. Electrical treatment has met with success not only in peripheral nerve injuries and muscle wasting, functional cases, etc., but also in cases of stiff joints, adherent scars and in those cases where re-education of the muscles is deemed necessary.

The massage department, which occupies a similar ward to the electro-therapeutic department, contains specially designed apparatus for exercises which are given under careful supervision.

In the plaster department the following classes of work are performed: (1) Fixation of limbs in plaster; (2) plaster records of limb before, during, and at conclusion of treatment; (3) casts for splints; (4) plaster splints.

In the curative shops, the men who are able to do so are gradually restoring health and strength to their muscles by such forms of handicraft as boot-repairing, net-making for the Sinclair fracture beds, splint-making, wood carving, photography, etc., while the efforts of the gardener patients, in keeping the grounds in order, afford recreation as well.

The number of treatments given during December, 1917, January and February, 1918, is shown below:

| | Massage | Electrical | Radiant Heat |
|---|---|---|---|
| Dec., 1917, 4 weeks ... | 1818 | 1124 | 164 |
| Feb., 1918, 4 weeks ... | 2404 | 1419 | 145 |
| Jan., 1918, 5 weeks ... | 2798 | 1585 | 271 |
| Totals ............... | 7020 | 4128 | 580 |

The plans for further extension of the hospital buildings have been put into execution entirely through funds provided by the Scottish Branch of the Red Cross Society.

Much the same ideas are carried out in the Scottish National Red Cross Hospital at Bellahouston, Glasgow, which is under the command of Lt.-Col. H. Chaffer, R.A.M.C. Here the orthopedic division is under the direction and supervision of Prof. R. Kennedy, and his assistants. The physical treatment is divided into four groups: (1) Hydrotherapy, which is carried out by the use of baths. Local or general, sedative or tonic baths are provided and a large circular pool adaptable for either calm, soothing effect or rapid, turbine motion of stimulation, may be used by 10 or 12 patients at once. (2) Mechanotherapy as a means of restoration of muscles and joints or as a strengthening measure, is carried on by massage, either mechanical or manual. Carefully planned exercise and massage under competent masseurs is given; and (3) Electrotherapy for the stimulation of nerves as well as (4) Radiotherapy for the same purpose are administered through different electrical apparatus.

In the curative workshops of these orthopedic centres, hastening of improvement is of prime importance. However, in a great many instances the latent aptitude of a man for some particular trade has shown itself here in the shops and thus it is that he is oftentimes better fitted to take up a particular kind of work on his return to civil life.

Such institutions as the Scottish National Red Cross Hospital and the Scottish General Hospital have risen to extreme military importance during the recent emergency. Men who have been cured by such treatment help to conserve the fighting power by their return to the line, and men who cannot fight again, cease to become objects of sympathy and are able to take their place as useful workers in civil life. Thus the original idea of treatment of crippled children has formed a nucleus of enormous possibilities for re-education and usefulness of the disabled man.

## UNDERSTANDING THE CRIMINAL IN THE PSYCOPATHIC LABORATORY OF THE MUNICIPAL COURT OF CHICAGO.

Dr. William J. Hickson, director of the psychopathic laboratory of the Municipal Court of Chicago, has recently presented to the Court a report of the work of his department for the period May 1, 1914, to April 30, 1917. In these first three years of its work there were examined 4,468 cases, contributions from the Boys' Court, the Court of Domestic Relations, the Morals Court, and other criminal branches. An effort to get at the cause and remedies, if possible, to find the answer to the question, "Why is a man a criminal?" has been the prime object of the laboratory, and to this end Dr. Hickson and his assistants have sought to root out the evil instead of trying to treat the disease. For the student of law and of medicine as well, the activities of the psychopathic laboratory afford much interesting material. The line of treatment is both mental and physical and an undertaking of this kind opens a wide field to the psychopathic expert. Since the judge is not always able to ascertain just what led to the commission of a crime, the laboratory method of psychological, neurological and psychiatric tests classifies in a short time the diagnosis and gives an idea of what the prognosis of criminal tendency may be in a particular case. With the advance of civilization the problem of crime is coming to be understood as the problem of mental defectiveness and instead of believing a criminal to be "possessed of an evil spirit," the laboratory methods of proved tests have demonstrated through medical science that he is really a subject of abnormal mentality.

Dr. Hickson has enumerated in his report a large number of actual case histories and has shown that through the laboratory pass victims of drugs, of heart disease, of tuberculosis, etc., and lays stress on the type of criminal who is the victim of dementia praecox. The biggest element, however, which is considered in Dr. Hickson's report of his work is that, especially among juveniles, psychopathology will be of an assistance to the court and not a hindrance. The laboratory method does not aim to save the delinquent from punishment by reason of his delinquency, but is a means of diagnosing a potential criminal before any serious offense has been committed.

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## YEAST AS A THERAPEUTIC AGENT.

In the issues of the Journal, under dates of August 18 and 22, 1918, there were discussed the subjects of "Vitamine Content of Cereal Foods" and "Vitamine and Nutrition." Within the last few months there has been considerable interest in the subject of the therapeutic uses of yeast and recently further demonstrations of its use in the treatment of furunculosis or acne rosacea and acne vulgaris have been called to our attention. In general, it is pointed out in these recent notices, that yeast, although used in medicine since the days of Hippocrates, was not looked upon favorably by the medical profession until the middle of the nineteenth century.

Since the main value of yeast lies in its vitamine content and since vitamines are indispensable in the diet, it naturally follows that the addition of yeast to the diet in certain pathological conditions might be of benefit. However, to accept the general use of the familiar baker's yeast as a treatment for pathological skin conditions, opens up a question for wide discussion. Hawk and collaborators have much to say of the value of compressed yeast in diseases of the skin and of the gastro-intestinal tract, and numerous investigators before Hawk have testified to its efficacy. Much stress is laid on a proper diet in the prophylaxis and treatment of various skin diseases in the articles referred to, and a great deal of the success in cases of skin disease have been attributed to the use of yeast in the diet. However, as treatment for these conditions must be both constitutional and local, it is particularly desirable that a circumspect attitude be still retained as to the widely-proclaimed therapeutic properties of yeast.

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## MEDICAL NOTES.

**Total Number of Deaths Due to Influenza in the United States.**—Between 300,000 and 350,000 deaths from influenza and pneumonia have occurred among the civilian population of the United States since September 15, according to estimates of the public health service based on reports from cities and states keeping accurate records. Public health officials believe that this figure is conservative. The epidemic still persists, but the reappearance of the disease in many communities probably does not indicate a general renewal of severe epidemic conditions.

About 20,000 deaths in the camps in the United States have been due to influenza.

**Cancer Control.**—The October issue of *Campaign Notes*, a pamphlet published by the American Society for the Control of Cancer, describes the cancer disease, reveals its prevalence, and emphasizes the necessity of combating it in its early stages. In order to promote publicity work in Massachusetts, it has been suggested that the newspapers publish the following facts:

"Of civilized people over 40 years of age one in every 14 men dies of cancer and one in every eight women. These figures are the careful computation of the life insurance companies.

"Cancer attacks more men and women over 40 than does tuberculosis, pneumonia, typhoid fever or any chronic disease. About 80,000 deaths annually in the United States are due to cancer.

"The majority of cases of cancer in the early stages are curable. The bulk of all cancers are in positions that permit of successful operation.

"After 40 it is highly unsafe to neglect persistent ulcerations, cracks in the skin, sores, lumps in the breast, or chronic indigestion with loss of weight and change of color.

"Birthmarks, moles or warts which change their appearance or show signs of irritation should be regarded with suspicion and should be examined by a competent surgeon.

"Medicine is worse than useless: By producing a period of freedom from discomfort it delays the proper treatment. Medical cancer cures are all bogus. Barring the use of radium or similar means for the small affairs of the skin, surgical operation is the only cure for cancer.

"In the earliest stages of the 'precancerous' conditions the operation for cancer of the breast usually requires an incision only an inch or two long, necessitates carrying an arm in a sling for a few days, brings about only a trifling expense and causes no deformity.

"Women must learn not to wait for pain to become prominent but to seek competent advice regarding mysterious symptoms. Pain indicates that the sufferer is late in action but not necessarily too late.

"Heredity is a factor of small importance in discussing cancer and the possibility of transferring cancer from one person to another may be practically disregarded."

**INFLUENZA IN PORTO RICO AND NEW ZEALAND.**—On November 30, Governor Yagar, acting on the report of the Porto Rican commissioner of health, ordered all schools, churches, and theatres to be closed and a ban was placed on public gatherings because of the influenza epidemic.

The labor federation has requested federal aid and has asked the United States Public Health Service be placed in charge of it. Secretary of War Baker announced that the surgeon-general and the public health service would coöperate with the insular authorities. A shortage of doctors, nurses, medicines and food in many localities has been reported to such a degree that it cannot be relieved by the Red Cross.

In New Zealand, especially among the natives, the epidemic is still spreading. Hotels and breweries are closed and the newspapers are asked not to publish the mortality returns. The Government has sanctioned the discretionary closing of banks, owing to their depleted staffs.

## WAR NOTES.

**INFLUENZA LOSSES AT SEA.**—It has been unofficially reported that 3500 soldiers, stricken with influenza while being convoyed across the Atlantic, have been buried at sea.

**HOME ARMY HEALTH IMPROVED.**—General improvement in the health of soldiers in home army training camps and cantonments is shown by the report of the Surgeon-General for the week ending November 22. New cases of influenza numbered 3396, compared with 4485 the week before, and there were decreases in admissions for other diseases. Deaths were at the rate of 13.7 per thousand per year, compared with 19.7 the previous week.

The death rate from disease among soldiers of the army in France for the week ending November 15 was 12.9 per thousand per year.

**AMERICAN RED CROSS NEED OF NURSES.**—The American Red Cross will need the coöperation of nurses in carrying out peace activities. The rebuilding of the health and morale of the invaded countries of Europe will require the services of many physicians and nurses. Tuberculosis, typhus, and influenza are prevalent, and malnutrition, exposure, and exhaustion present serious problems. There will be opportunities for American nurses to help in this reconstruction work.

In this country, the town and country nursing service will be developed to the utmost under the direction of the Red Cross. Releasing nearly twenty thousand graduate nurses from military service will enable the Red Cross to engage in various lines of social welfare work.

**WOUNDED MEN TO BE NEAR THEIR HOMES.**—Plans by which all wounded men returning from France will go to hospitals within three hundred miles of the homes of their nearest relatives have been announced by the War Department. Base hospitals at training camps have been turned over to the Surgeon-General, providing seventy-five hospitals with facilities to care for 104,231 men. Fifty thousand men are expected to be sent to these institutions within the next four months.

The seventy-five hospitals do not include those at the ports of debarkation, New York and Newport News. There the wounded will be received on arrival from France in fifteen institutions now ready for them with a bed capacity of 22,068. From the ports the men will be taken on specially fitted trains to one of sixteen localized hospital groups, where assignments will be made in such a way that each wounded man will go back to the region from which he entered the service.

Group No. 1 comprises general hospitals at Boston, New Haven, East Norfolk, Mass.; Plattsburg barracks and the base hospital at Camp Devens.

Health Conditions Show Improvement at Camps.—Improvement in the health of soldiers in home army training camps and cantonments is shown by the report of the Surgeon-General for the week ending November 22.

New cases of influenza numbered 3,396, compared with 4,485 the week before, and there were decreases in admissions for other diseases. Deaths were at the rate of 13.7 per thousand per year, compared with 19.7 last week.

The death rate from disease among soldiers of the Army in France for the week ending November 15 was 12.9 per thousand per year.

Promotion of Officers in Army Medical Corps.—Colonel Walter D. McCaw and Major General Robert E. Noble of the National Army have been promoted to the rank of Brigadier-Generals in the Regular Army Medical Corps.

Effect of War in Berlin.—The vital statistics of Berlin are now available. They disclose the almost catastrophic effect of the war's privations on the people.

The excess of births over deaths in 1913 was 12,766. In 1916 there was an excess of deaths over births of 4,440, and there were 15,397 more deaths than births in 1917. These figures do not include the soldiers who died at the front or in hospitals. The total number of deaths in 1917 was 7,000 more than the previous year, despite the fact that Berlin's population has decreased 70,000.

### BOSTON AND MASSACHUSETTS.

Street Cars in Bad Sanitary Condition.—Investigation of the Boston Elevated surface cars on the Dorchester Avenue, South Boston and Upham's Corner lines has revealed unsanitary conditions. At the request of Mayor Peters, three Health Department inspectors made examinations at various times. Of one hundred and eighty-five cars inspected, the report shows that only five of these—less than three per cent.—were found in sanitary condition. It was discovered that in the majority of cases, nothing was done to clean the cars at night, and they were sent out in the morning in the same condition in which they had been put away.

## Miscellany.

### IN MEMORIAM

### Thomas Francis Leen.

Thomas Francis Leen was for five years Physician and for six years Physician-in-Chief to the Carney Hospital.

By his cheerfulness of spirit and sympathetic care he endeared himself to the many sick who came to him for help. He was abundantly charitable in word and deed; keenly sensible of the higher values of humanity; thoughtful of points of view not his own; skilled in the art of medicine and abreast with the progress of its science; kindly and esteemed as a teacher; unselfish in his devotion, to the end, so that his life was given in sacrifice for others.

It is with a sense of deep personal as well as professional loss that the Staff of the Carney Hospital formally records his death on September 17, 1918.

Minute of Meeting of Staff of Carney Hospital,
October 31, 1918.

### NOTICE TO DISTRICT SOCIETIES OF THE MASSACHUSETTS MEDICAL SOCIETY.

The Public Health Committee of the Massachusetts Medical Society, with a view to increasing the benefits to be derived from membership in the society, and helping the busy practitioner to keep in touch with current matters of practical interest to the profession and pertaining to their daily work, has obtained the consent of the following named gentlemen to speak at meetings of District Societies during the year, in so far as requests may be made and other engagements permit arrangements for designated dates: Professor Wm. T. Sedgwick, Dr. Walter E. Fernald, Dr. C. Morton Smith, Dr. John Bapst Blake, Dr. Edwin H. Place, Dr. M. Victor Safford, Dr. William C. Woodward, Dr. Timothy Leary, Dr. Jose P. Bill, Dr. George H. Wright; and possibly a representative of the Rockefeller Institute, N. Y.

The object of these talks is the promotion of public health and increase of knowledge of practical details of daily interest in life of physicians in general practice.

In furtherance of the purpose which the Committee had in view, these gentlemen have offered their services without expense to the members of the Society and are willing to give time for discussion and questions.

Secretaries of District Societies desiring to arrange speakers from this list should communicate with the Secretary of the Committee, Dr. Annie Lee Hamilton, 141 Newbury Street Boston, Mass.

### RECENT DEATHS.

Dr. Francis L. Lane died recently at his home in Lynn at the age of fifty-two years. Dr. Lane was a graduate of the Harvard Medical School in the class of 1892. For four years he was quarantine officer at the port of Boston and later was in charge of the medical department at Deer Island. He had been a member of the Lynn Board of Health.